IOWA DEPARTMENT OF NATURAL RESOURCES

Sport Fish Restoration Research Findings

Evaluation of channel catfish populations in Iowa's small constructed lakes

Project Duration: 2004-2012
Location: Lakes Statewide

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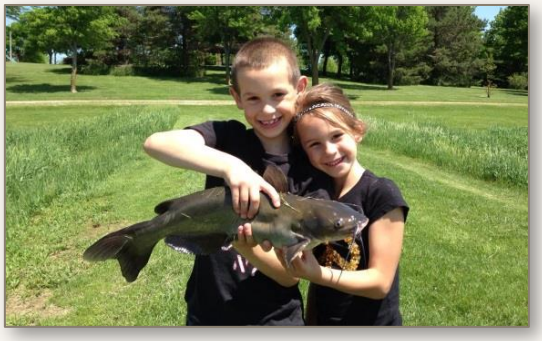
Evaluation of channel catfish populations in Iowa's small constructed lakes

Channel catfish are one of the most sought after sport fish in Iowa and are stocked into almost every lake in the state. Hatchery space limits fish production and annual requests for catfish from managers regularly exceed production capacity. The cooperative catfish cage-rearing program was implemented to alleviate this issue, though this program has been discontinued in recent years. This study sought to address issues facing managers that could impact catfish management and provide them with tools to distribute this limited resource efficiently.

Goals

- To determine which parameters would provide the best trend data for managers to make assessments of the catfish population and inferences about density, biomass and growth in one lift of standard baited-hoop nets.
- Use recent and past creel surveys to assess catfish angler effort and catch and harvest rates statewide.
- Assess catfish angler's preference for either greater numbers or size of catfish to harvest.



Results

- A single lift of Iowa DNR's standard catfish sampling gear provided an informative assessment of most catfish fisheries.
- Considerable within lake variation in annulus formation was observed during summer.
- Particularly with cage-stocked lakes (though not exclusively), densities of channel catfish can become so high that growth is impacted.
- Proportional size distribution, mean size, and relative weight were negatively related to density. A high CPUE of sub-stock catfish was indicative of a high density population.
- Stocking rate was relatively unimportant in dividing populations into groups of higher and lower density, biomass or growth.
- Lakes stocked with larger (mostly cage-reared) catfish attain higher density and biomass than lakes stocked with smaller hatchery-reared fish at similar stocking rates.
- The proportion of channel catfish anglers and effort varied greatly between lakes.
- Catfish anglers prefer to catch more small fish over catching just one or two larger fish.

Conclusions

- Managers can use data collected with one lift of standard baited hoop nets with the regression trees in the report to make quick, general inferences about a catfish fishery.
- Structures for age-growth analysis should be collected in spring or fall and not during the standard summer sampling period.
- If fast growth is desired, CPUE should be maintained below 175.
- When CPUE exceeds 200, stocking should be discontinued.
- Hatchery stocked catfish should be at least 8 inches (i.e., ~9-inch average) before stocking in Iowa lakes.
- Stock catfish where anglers are fishing for them to increase catch rates.